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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/746,056	12/21/2000	Jarmo Lehtonen	297-010035-US(PAR)	9867

7590

09/16/2002

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EXAMINER

PAULRAJ, CHRISTOPHER

ART UNIT

PAPER NUMBER

1773

DATE MAILED: 09/16/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/746,056

Applicant(s)

LEHTONEN, JARMO

Examiner

Christopher G. Paulraj

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-40 is/are rejected.
- 7) ☒ Claim(s) 1-40 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. The phrase "characterised in that" used in claims 1-40 is objected to because it does not conform to current USPTO standards for claiming. The phrase "wherein" is more appropriate instead.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-40 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. The phrase "film-like" in claims 1, 3, 17, 19, 39, and 40 render the claims indefinite. Neither the claims nor the specification provide a standard for what constitutes a "film-like" optical coating as opposed to other types of optical coatings.

5. Claims 1-16 are indefinite because they fail to specifically set forth in the individual steps that make up the claimed process. Applicants use phrases such as "there is formed" and "there is created." These, however, fail to clearly indicate that a step of forming or creating is required. In accordance with currently accepted U.S. practice, Applicants are required to begin each process step with a gerund (e.g., forming, creating, etc.)

6. The phrases modified by the term "given" in the claims (e.g., "given first [or second] interference effect" (claims 1, 17), "given wavelength" (claims 1, 17), "given

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nuance" (claim 7), "given coating pattern" (claim 10), "given photon radiation" (claim 16)) suggest that the term that is modified must meet a certain minimum requirement to qualify. That is, the claims require a specific interference effect, wavelength, nuance, etc. However, since the claims do not specify exactly what these requirements are (other than the fact that they are "given"), one skilled in the art would not be able to determine what specific interference effect, wavelength, nuance, etc. would constitute infringement upon the claims. The claims are therefore indefinite.

7. The phrase "there is essentially employed," used in claims 3 and 4, is indefinite because exactly what qualifies as an essential employment of the recited process is not defined. How does a process that "essentially employ[s]" a CVD, PVD, or sputtering process differ from one that simply employs such a process?

8. The term "nuance" used in claim 7 is indefinite because neither the claims nor the specification provide any standard for determining exactly what qualifies as such.

9. Claims 8 and 9 recite that there are "created areas with different electrical charges [or magnetic properties]" However, neither the claims nor the specification provide any clue as to exactly where these differences occur. Is it on the surface of the object prior to coating or is it on the coated surface? The claims are therefore indefinite.

10. Claims 11-16 recite that the "process includes steps for marking the object with an identifier." However, it is unclear from the claims whether these steps are separate and distinct from the steps reciting the formation and creation of the first and second interference effects recited in the parent claim 1.

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11. Claims 13 and 28 do not clearly specify exactly what type of symbol qualifies as "a symbol of a lawful manufacture of an object."
12. Claim 14 does not specify how an identifier can be marked as "both visible and invisible for the naked eyes."
13. Claim 15 fails to indicate what qualifies as a "sufficiently small identifier."
14. Regarding claims 23 and 24, the phrase "such as" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).
15. Claim 30 requires that the coating "thicknesses" are within the specified range. However, since the parent claim 17 does not specify more than one coating layer, it is unclear how there can be more than one thickness involved.
16. Claim 34 recites the limitation "the first product" in line 2. There is insufficient antecedent basis for this limitation in the claim. There is no indication in the parent claim 17 of any "product" whatsoever.
17. Claims 35-37 recite the limitation "the product" in line 2. There is insufficient antecedent basis for this limitation in the claim. There is no indication in the parent claim 17 of any "product" whatsoever.
18. Claims 38-40 recite the limitations "self-luminous" or "self-luminosity." However, neither the claims nor the specification provide any standard for determining exactly what these terms mean.
19. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the

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art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

20. Claim 25 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The claim recites that the object comprises coating layers in order to create a hologram. However, the specification does not provide enough guidance to determine exactly how to make the claimed hologram. It only states that "the thickness and materials of the surface layers must be chosen so that as a total effect of the patterns, there is created the three-dimensional space effect typical of holograms." However, there is no further guidance as to what the thickness and materials should be in order to achieve this effect. There are many factors to be considered when determining whether there is sufficient evidence to support a determination that a disclosure does not satisfy the enablement requirement and whether any necessary experimentation is "undue." These factors include, but are not limited to: (A) The breadth of the claims; (B) The nature of the invention; (C) The state of the prior art; (D) The level of one of ordinary skill; (E) The level of predictability in the art; (F) The amount of direction provided by the inventor; (G) The existence of working examples; and (H) The quantity of experimentation needed to make or use the invention based on the content of the disclosure. See MPEP 2164.01(a). In the instant case, consideration of at least factors (D), (E), (F), and (G) suggest that one skilled in the art would have to undergo undue experimentation to make and use the claimed invention. There is no guidance or working example to enable one skilled in the art to form a

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hologram and the level of ordinary skill and predictability suggest that one skilled in the art would not know how to make a hologram from the instant disclosure.

Claim Rejections - 35 USC § 102

21. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

22. Claims 1-4, 6-11, 14-15, 17-21, 23-24, 26-28, 30, and 33-34 are rejected under 35 U.S.C. 102(b) as being anticipated by Dobrowolski et al. (EP 0181770 A2).

Dobrowolski et al. discloses a method of manufacturing an optical interference authenticating device wherein a substrate is applied with a first coating and a second coating and portions of the coating are thereafter removed by ion beam to provide a readily distinguishable pattern (abstract). The coating can be done by vapor deposition techniques (such as CVD) or by sputtering (page 18, lines 32 to page 19, line 1). The portion that is removed can be one layer of coating (thereby exposing the second layer) or both layers (thereby exposing the substrate layer) (abstract). The result in either case would be a surface having spots with first and second interference effects. The coating can be made of a variety of metal compounds (such as MgF_2 and SiO_2), which can be considered as “coloring agents to achieve a given nuance.” (page 19, lines 9-15). The exposed and unexposed portions would therefore have different electrical charges and magnetic properties. The pattern formed can be alphabetic characters and

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graphic symbols that can be considered as an identifier and "sufficiently small" (see fig. 7, 15). They may also be considered as "a symbol of an object's manufacture." The object that is coated can be considered as a "display" or a "part of a product." The coating thickness can be 0.4 μm (claim 11).

Claim Rejections - 35 USC § 103

23. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

24. Claims 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dobrowolski et al. in view of Prince et al. (U.S. Patent 5,605,759).

Dobrowolski et al. does not specifically disclose that the coatings can be applied using a physical vapor deposition technique. However, the use of such methods are well known in the art. For example, Prince et al. disclose that physical vapor deposition (PVD) techniques may be advantageous over CVD techniques because growth of films may be undertaken at low temperatures on substrates that would not survive higher temperatures (see col. 4, lines 34-40). It would therefore have been obvious to utilize a PVD technique to deposit the coating in the invention of Dobrowolski et al. The motivation for doing so would have been to form the film at low temperatures.

25. Claims 12-13, 22, 29, 31-32, and 35-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dobrowolski et al.

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Dobrowolski et al. does not specifically disclose that the identifier is a trademark identifier or a symbol of lawful manufacture or that the object is a mobile telecommunication device, product package, protective shell, instruction guide, guarantee, or certificate of authenticity. However, one skilled in the art would realize that the techniques used by Dobrowolski et al. to form the pattern can be used to form a trademark symbol (or any other symbol of lawful manufacture) and that the technique can be applied to any object on which it is desired to form a pattern. The motivation for doing so would have been to indicate that the object is being lawfully manufactured and to communicate a message on the surface of the object manufactured.

26. Claims 38-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dobrowolski et al. in view of Jones et al. (EP 1036828A1) and Powell et al. (EP 0325825 A1).

Dobrowolski et al. does not specifically disclose the use of materials that cause phosphorescence or fluorescence to achieve "self-luminosity." However, Jones et al. and Powell et al. discloses that the use of such materials is known in the art (see abstracts). One skilled in the art would found it obvious to use them in the coating of Dobrowolski et al. The motivation for doing so would have been to improve the brightness of the coated object.

Information Disclosure Statement

27. Receipt of Information Disclosure Statement filed on July 22, 2002 is acknowledged and has been made of record. Foreign language documents were only considered to the extent of what their English abstracts provided.

Conclusion

28. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher G. Paulraj whose telephone number is (703) 308-1036. The examiner can normally be reached on Monday-Friday, 8am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Blaine Copenheaver can be reached on (703) 308-1261. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-0661.

cgp
September 11, 2002


Paul Thibodeau
Supervisory Patent Examiner
Technology Center 1700